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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,327	11/26/2003	Jiro Iizuka	018842.1279	8377

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BAKER BOTTS LLP  
C/O INTELLECTUAL PROPERTY DEPARTMENT  
THE WARNER, SUITE 1300  
1299 PENNSYLVANIA AVE, NW  
WASHINGTON, DC 20004-2400

EXAMINER

SAYOC, EMMANUEL

ART UNIT PAPER NUMBER

3746

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/721,327

Applicant(s)

IIZUKA ET AL.

Examiner

Emmanuel Sayoc

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 November 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 10 and 11 is/are rejected.
- 7) ☒ Claim(s) 6-9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/26/03</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, 4, 10, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Kishi et al. (U.S. 3,904,320).

Kishi et al. in Figure 1 teaches a compressor comprising a compressor housing (11', 19) a plurality of cylinder bores (34, 34') made in the compressor housing (19) and spaced from one another in a circumferential direction of the compressor, a plurality of pistons (15, 15') reciprocally movable in the cylinder bores (34, 34') respectively, and a cylinder head (24) opposite to one end of the compressor housing and defining a refrigerant suction (25') chamber and a refrigerant discharge chamber (26') each of which communicates with the cylinder bores (34, 34'). The cylinder head (24) having a space located between the refrigerant suction chamber (26') and the refrigerant discharge chamber (25'), see dividing wall that spaces chamber (25') from chamber (26').

In the refrigerant compressor, the suction chamber (25') is at a radially center area of the cylinder head (24) while the refrigerant annular (see Figure 2) discharge chamber (26') is at a radially outer peripheral area of the cylinder head (24).

The compressor further comprises a valve plate (29') interposed between the compressor housing (11', 19) and the cylinder head (24).

With respect to the refrigerant being carbon dioxide, a recitation with respect to the material intended to be worked upon by a claimed apparatus does not impose any structural limitations upon the claimed apparatus which differentiates it from the prior art apparatus satisfying the structural limitations of the claims, as is the case here.

MPEP section 22.251

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

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not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kishi et al., as applied to claim 1, and in further view of Sieberg (U.S. 6,942,472 B2).

Kishi et al. set forth a device as described above, which is substantially analogous to the claimed invention. The Kishi et al. device differs from the claimed invention in that there is no explicit teaching of the space being formed by a groove which opens to the outside of the cylinder head. Sieberg in Figure 1 teaches a piston compressor head pressure relief assembly (120). The head assembly features a suction chamber (146) and a discharge chamber (128). The head assembly (120) features an unloader post (134) and passage (140) for allowing the relief of discharge pressure before compressor operation without the need for separate un-loader valves (see abstract, column 1 lines 33-51, column 4 lines 7-24). Heat-releasing protrusions are formed on an outer surface of the head (Figure 1, 120). A space (shown not enumerated) is provided formed by a groove, which opens to the outside of the cylinder head (120). Therefore it would have been obvious to one of ordinary skill in the art at time the invention was made to modify the Kishi et al. device by, incorporating the head pressure relief assembly, as taught by Sieberg, in order to advantageously relieve discharge pressure before operation for increased efficiency and with reduced valve

parts. In this combination it would have been obvious to incorporate all the essential components of the Sieberg head assembly for each cylinder including the heat releasing protrusions, and the grooved space taught by Sieberg.

***Allowable Subject Matter***

6. Claims 6-9 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references are cited to further show the state of the art with respect to refrigerant compressors.

U.S. Pat. 4,722,671 to Azami et al., 3,354,830 to Mortara, and 5,857,839 to Fisher et al. – teach various compressors similar to the claimed invention.

***Contact Information***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Sayoc whose telephone number is (571) 272 4832. The examiner can normally be reached on M-F 8-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy S. Thorpe can be reached on (571) 272-4444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Emmanuel Sayoc  
Examiner  
Art Unit 3746

ECS